

“Integrative Cancer Care” (Donald Abrams, MD) [#102]

Brad Power
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“My goal when I see a patient is to give them back a sense of control. When you hear the diagnosis that you have cancer, your locus of control has been ripped from underneath you. You're now at the mercy of the surgeon, the radiation oncologist, the medical oncologist, and even the chemotherapy nurse. By giving the patients things that they can do themselves: modifying their diet, increasing their physical activity, rational use of supplements, decreasing stress, that allows the patient to have an increased sense of control.” – Donald Abrams

Meeting Summary

Cancer patients are motivated to maximize the effect of their main conventional cancer treatment (e.g., chemotherapy, radiation, surgery, immunotherapy, targeted drugs) with complementary treatments (e.g., diet, supplements, exercise, yoga, meditation). Some of these complementary therapies are generally accepted as healthy practices -- they are not unique to cancer; they are the same if you want to have a healthy heart or a healthy brain, such as exercise and a healthy diet. Some are situationally employed as complementary to a main therapy, such as hyperbaric oxygen to help with wound healing. To improve outcomes from their main conventional cancer treatment, patients and caregivers need to consider the “terrain”, not just the tumor, and tailor the treatment uniquely to the individual. Traditional standard treatments can be delivered according to a standard protocol and miss critical factors that may impact the individual patient, such as the gut microbiome, immune system, inflammation, hormone modulation, stress, and mental and emotional state.

Some complementary or integrative therapies have a strong evidence base (from randomized clinical trials), but many don't. Much of complementary or integrative cancer care is “evidence-informed” and not necessarily “evidence-based”. This gray zone that is not firmly a standard practice requires judgment, which often falls on the personal preferences of the patient and caregiver. They are challenged to evaluate non-standard treatments, and especially how they may work in combination with other therapies.

Donald Abrams, M.D., is uniquely qualified to talk about integrating complementary and conventional therapies. He is an integrative oncologist at the UCSF Osher Center for Integrative Medicine and Professor Emeritus of Medicine at the University of California San Francisco. He believes that cancer patients benefit from having both a conventional treatment plan as well as a whole-person approach. He was Chief of Hematology-Oncology at Zuckerberg San Francisco General from 2003-2017. He graduated from Brown University in 1972 and from the Stanford University School of Medicine in 1977. After completing an Internal Medicine residency at the Kaiser Foundation Hospital in San Francisco, he became a fellow in Hematology-Oncology at UCSF in 1980. During his fellowship, Dr. Abrams spent eight months working in the retrovirology laboratory of Harold Varmus, M.D., during the time that the first cases of AIDS were being diagnosed. He subsequently returned to the clinical arena where he was one of the original clinician/investigators to recognize many of the early AIDS-related conditions. He

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conducted numerous clinical trials investigating conventional as well as complementary therapies in patients with HIV including therapeutic touch, Traditional Chinese Medicine interventions, medicinal mushrooms, medical cannabis and distant healing. He is considered to be a pioneer in the investigation of inhaled cannabis, having conducted studies funded by the NIH and the University of California Center for Medicinal Cannabis Research. His interest in botanical therapies led him to complete a two-year Fellowship in the Program in Integrative Medicine at the University of Arizona in December 2004. He co-edited the Oxford University Press textbook, *Integrative Oncology*, with Andrew Weil, M.D.. Dr. Abrams was a long time member of the NCI PDQ Integrative, Alternative and Complementary Therapies Editorial Board and a past President of the Society of Integrative Oncology.

In 1998 UCSF established the Osher Center for Integrative Health, the first center to comprise fully developed integrative programs in clinical care, education, and research. It is one of the leading integrative health institutes in the world. Their strengths include robust, multidisciplinary research and education programs in integrative medicine, as well as clinical services that provide an optimal healing environment for patients and a range of approaches for individuals and families seeking health and well-being.

What are the challenges that patients and caregivers face in adopting integrative treatments?

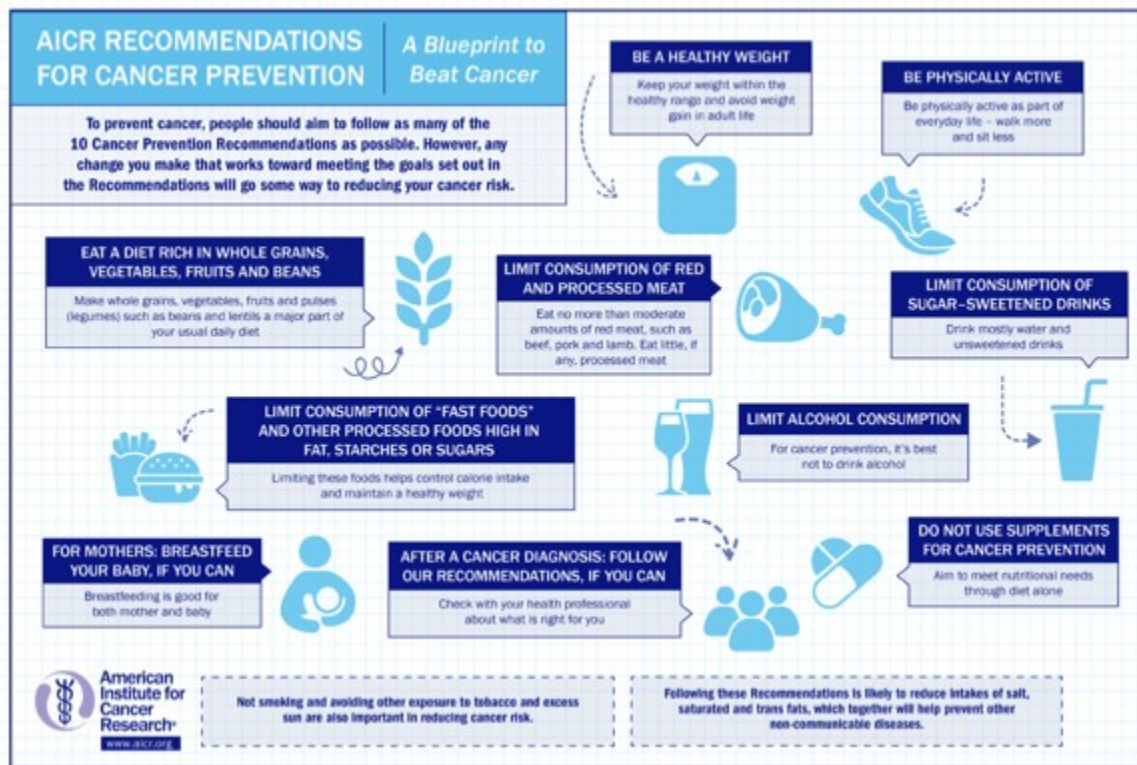
- There usually isn't enough data to confidently recommend specific therapies or foods for a particular patient, e.g., for lymphoma treatment, or as a complement to chemotherapy.

What strategies should you employ to decide whether to adopt possible integrative treatments?

- Review them with your medical team and other trustworthy sources
- Try to determine the evidence supporting the integrative treatment and confidence in it; understand whether the treatment is “evidence-based” or “evidence-informed”; be cautious about unproven approaches
- Check for potential interactions between the integrative treatments and your standard treatments, e.g, share your supplements in your medical record with your medical team
- Follow generally accepted healthy practices for diet, exercise, and stress management; choose therapies which maintain a healthy weight and decrease stress and inflammation
- Share your results from using integrative approaches

What are generally-accepted healthy behaviors that everyone should follow?

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- Follow an organic, plant-based diet, rich in antioxidants and anti-inflammatory, real and whole foods, and some supplements; for example, eat fruits, vegetables, whole grains, nuts, and legumes; among the fruits and vegetables, favor cruciferous vegetables that grow in the shape of a cross: broccoli, cauliflower, Brussels sprouts, cabbage, kale, collard greens, bok choy, and arugula; season with ginger, garlic, onions, and turmeric; your fruit should be heavily pigmented, like berries
- Maintain a healthy weight
- Be physically active
- Reduce your stress level, e.g, through yoga, meditation, exercise
- Restrict the time you eat, e.g., 6:00 pm to 7:00 am, but don't skip breakfast – the most important meal of the day
- For breakfast, consider low sugar, complex carbohydrates, such as muesli with blueberries and walnuts, or [mochi](#), which is pounded brown rice: puff it up in the oven, smear almond butter on it, and put a sweet potato on top

What are personalized choices that depend on your situation?

- Take Vitamin D supplements if you have low levels
- Take B12 supplements if you are on proton pump inhibitors
- Take Coenzyme Q10 if you are on statins
- Take calcium, magnesium, and zinc supplements if you have prostate cancer and for the immune system
- Choose cannabis tinctures if you are taking cannabis, due to the absorption profile and reduced risk of side effects

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- Cook shiitake, maitake, Turkey Tail, and enoki mushrooms for immune system enhancement; if you are taking mushrooms, alternate different mushroom types for maximum immune benefit
- Take a probiotic supplement if you have been treated with chemo

What are foods and supplements that you should avoid?

- Sugar, sugary drinks, including (fruit) juicing
- Processed foods, fast food
- Alcohol
- Eggs – second only to processed foods for increasing mortality; associated with prostate cancer
- Quercetin, resveratrol, and other unproven supplements
- Cannabis, alcohol, probiotics, and medicinal mushroom pills, if you are getting an immunotherapy
- Antioxidants, if you are getting chemotherapy or radiation
- Be skeptical about fasting, due to potential harm to normal cells
- Raw mushrooms
- Dairy
- Intravenous Vitamin C

What can you do to learn more about integrative practices?

- Read the [World Cancer Research Fund/American Institute for Cancer Research guidelines](#) and visit the [American Institute for Cancer Research website](#) for evidence-based cancer prevention guidelines
- See [our discussion with Nigel Brockton](#), PhD, Vice President of Research at the American Institute for Cancer Research, on “Scientific Research on Lifestyle Choices to Reduce Your Cancer Risk”
- You can join one of Dr. Abrams’ group medical visits, where he sees up to 10 people for three sessions: (1) nutrition and cancer, (2) supplements, including cannabis and increasingly, psilocybin, and (3) physical activity, traditional Chinese medicine, stress reduction, etc.

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Meeting Notes

KEYWORDS

supplements, patients, cancer, eat, integrative medicine, immunotherapy, mushroom, talk, guidelines, evidence, cannabis, question, good, integrative oncology, lymphoma, abrams, number, people, recommendations, risk

SPEAKERS

Donald Abrams (67%), Allen Morris (9%), Brad Power (8%), Jeff Marchi (4%), Robb Owen (4%), Roger Royse (3%), Brian McCloskey (3%), Jeff Krolick (2%)

SUMMARY

Cancer patients can get many potential benefits from complementary therapies, such as personalized nutrition. Evaluating and personalizing complementary therapies requires evidence to inform your decision-making. Conducting randomized double-blind placebo-controlled trials in nutrition and other complementary therapies is very challenging, so there is little “gold standard” evidence. Therefore, patients and caregivers must make decisions which are “evidence-informed” rather than being able to follow a standard guideline that is “evidence-based”.

OUTLINE

Integrative oncology and the treatment decision-making process, with a focus on nutrition, supplements, and physical activity.

- Early in his career Donald Abrams, MD, was at San Francisco General, dealing with the HIV/AIDS epidemic, and then pivoted to become an integrative oncology pioneer at UCSF.
- Patients need evidence-informed integrative practices, incorporating complementary therapies with conventional cancer care.
- Nutrition is important in healthcare, with dietary issues a leading cause of mortality in the US.
- People should be following an organic, plant-based diet rich in antioxidants and anti-inflammatory foods, and some supplements.
- There are potential interactions between pharmaceuticals and supplements.
- Patients should have control over their treatment through diet, exercise, and stress management.
- Decreasing inflammation and stress can help increase a person's sense of hope and empowerment in living with and beyond cancer.
- Healthcare professionals generally do not collect data on individual patients' integrative treatment outcomes.

Nutrition and supplements for cancer patients, with a focus on whole foods and avoiding processed foods.

- There isn't enough data to recommend specific foods for lymphoma treatment.
- Observational studies suggest cannabis use may worsen immunotherapy outcomes.

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- You should avoid sugar and processed foods for cancer prevention.
- Guidelines suggest healthy weight, physical activity, and avoiding sugary drinks for cancer survivors.
- If you are getting immunotherapy you should avoid alcohol and medicinal mushrooms.
- Exercise has many potential benefits of exercise, including reducing cellular toxicity.
- If you are getting immunotherapy, you should avoid taking mushroom capsules due to potential cancer-causing compounds.
- Paul Stamets' has done extensive research on mushrooms, including an old growth forest mushroom agarikon, which may have immune-enhancing features.
- If you are taking mushroom supplements, you should alternate different mushroom types for maximum immune benefit.
- You should be skeptical about fasting due to potential harm to normal cells.
- Time-restricted eating may be beneficial, particularly if you don't skip breakfast.
- A high protein, low carb breakfast is recommended.

Cannabis

- A 14-year prostate cancer survivor experienced afib (atrial fibrillation, an arrhythmia) after taking marijuana.
- Tinctures are recommended due to faster absorption and reduced risk of side effects.
- Ingesting THC (Delta-9-tetrahydrocannabinol, the principal psychoactive compound and 1 of the 113 cannabinoids identified within the class of cannabinoid medications, used to treat chemotherapy-induced nausea and vomiting and stimulate appetite) orally can lead to psychoactive effects, cardiovascular effects, and ego dystonic reactions (negative assessments that people make of their thoughts, emotions, impulses, or behaviors when they feel they are inconsistent with who they are or what they believe, including feelings of repugnance, distress, or unacceptability.)

Evidence-based medicine, evidence-informed medicine, and integrative oncology.

- What is the difference between evidence-based medicine and evidence-informed recommendations?
- The American Institute for Cancer Research World Cancer Research Fund's continuous update project, which includes a panel of experts with more than 24 people in integrative medicine, is an authoritative, trustworthy source of information.
- The effectiveness of supplements in integrative oncology is questionable, given a lack of evidence-based research.
- The Society for Integrative Oncology has a panel of 600 members from around the world, but they have not conducted a comprehensive review of supplements for cancer treatment.
- Evidence-based and evidence-informed practices should not be mixed.

Supplements for cancer treatment, with recommendations for vitamin D, Omega-3, and calcium

- Vitamin D supplements are recommended for cancer patients with low levels.
- B12 supplements are recommended for people on proton pump inhibitors, especially older adults, due to statins depleting Coenzyme Q10.
- Calcium, magnesium, and zinc supplements are recommended for prostate cancer patients.
- Quercetin, resveratrol, and other unproven supplements should be avoided.

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TRANSCRIPT

Brad Power

This is the Cancer Patient Lab. Today we are honored to have Dr. Donald Abrams with us. He is a leader in integrative oncology.

We've had several conversations about integrative oncology, or complementary therapies, or alternative therapies, from [Bapcha Murthy, who said that so much of this is a scam](#), to [Nasha Winters, who said that this is all good stuff you should be considering](#). There is a gray zone in between these two extremes, of how you evaluate treatments where it's not clear that it's evidence-based and solid, or something that's probably pretty shaky, and you should be skeptical of.

I expect that Dr. Abrams will speak to that gray zone and the decision-making process people need to go through.

This is not medical advice. This is information for you to take to your medical team.

We are a patient-led community. If you're inspired to donate, please check out our website and click the donate button.

Donald Abrams 2:02

I was chief of Oncology at Zuckerberg San Francisco General for 15 years. I stepped down eight years ago. I've been an oncologist now for 41 years, and at the beginning of my training to be an oncologist, suddenly AIDS came out of the blue. We didn't know what it was or what to do about it, and it impacted my community. I was very much involved in the early days of HIV/AIDS.

I became a champion at that time of alternative therapies, even though there was no conventional therapy to be alternative to. Then when we got conventional therapy, I think some of you may remember, AZT, I said, “This isn't very good.” I wrote all the chapters in all the AIDS textbooks on complementary and alternative therapies in HIV.

Then in 1992, someone challenged me to study cannabis as a treatment for “AIDS wasting syndrome” (a rare condition that causes people with advanced HIV disease to lose more than 10% of their body weight, especially muscle). I said, “Okay. I can do that. I went to college in the 1960s.” I fought the government for five years and ultimately won and got marijuana and money to do research, which gave me a strong appreciation of the power of plants as medicine, which then took me to the Telluride mushroom festival in Telluride, Colorado. A month after I had done my first ever jury duty, I came home and said, “I want to go to law school.” But in Telluride, I met [Andrew Weil](#), the guru of integrative medicine. He described a two year online distance learning fellowship you could do with his program in Integrative Medicine at the University of Arizona. I said, “Aha. I don't want to go to law school, I want to do that.” So I did, and it changed my life. When I finished, I said, “I'm done with HIV/AIDS. I've done that for 25 years. It's very different

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from when I started. What I want to do now is integrative oncology, working with people living with and beyond cancer and helping them to integrate these other modalities, nutrition, physical activity, supplements, including cannabis, Chinese medicine, stress reduction, and spirituality into their conventional care.” I couldn't really do that at San Francisco General, where I often say, for most of my patients there, cancer is the least of their problems. They're homeless. They're addicted. They're psychotic, or they're undocumented. So I can't really talk to them about eating organic or doing yoga.

I went over to our Osher Center for Integrative Medicine, now, the Osher Center for Integrative Health at the University of California, San Francisco, and I asked if I could just do a half-day clinic just to see if I liked it, in 2005. I did, and I liked it, and I did two half days, and then I became the director for a few years. I stepped down from that, but I continued to work at the Osher Center, and I retired from UCSF in 2020, in the middle of the pandemic. My retirement party was online instead of on top of the new hospital building. But at UCSF, they allow you to retire and disappear for a month, and then you could be recalled for emeritus status. I was recalled, and I continue to work at the Osher Center.

Initially, I was seeing patients three mornings a week. Now I'm down to two mornings a week. But it's something I really love. I'm very much defined by what I do, and I help people. I want to continue to do it.

To increase my ability to reach more people, in addition to doing a clinic, I also do group medical visits, where I see up to 10 people for three sessions. The first session is about nutrition and cancer, because that is my passion. The second session is on supplements, including cannabis. And increasingly, psilocybin is questioned. The third visit is about physical activity, traditional Chinese medicine, stress reduction, etc. After those three group visits, I often will see patients one-on-one when I can. Right now, my next follow-up appointment is in March of 2025. I'm a little bit booked.

What I do is not “alternative”, as Allen was saying, or “complementary”, it's “integrative”, where we integrate complementary therapies with conventional cancer care.

The question about evidence is critical because we say in integrative medicine that it's “evidence-informed”. Modern Western medicine is so evidence-based, and as an oncologist, when I was treating cancer at San Francisco General, I dealt with a very serious disease, and we used very significant interventions. Yes: I want to see results from randomized double blind placebo controlled trials. But if I tell you to eat more blueberries and broccoli, you can't do a randomized placebo-controlled trial where this half of the room eats tofu for the next 25 years, and this half eats placebo. Many people think tofu is a placebo. We can't do those trials in nutrition, which is so important.

JAMA, the Journal of the American Medical Association, looks at the state of US health. The number one cause of both morbidity and mortality in the United States today is dietary issues, which have surpassed tobacco and hypertension as the leading cause of both mortality and

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morbidity. For those dietary issues, we don't have randomized placebo-controlled trials to support them, even for cannabis.

Let's talk about that for a minute. It's an effective therapeutic botanical that's been around for thousands of years. Because of our restrictions, making it schedule one, i.e., high potential for abuse, and no accepted medical use, it's impossible to generate randomized placebo-controlled trials showing benefit.

When I see a patient at the Osher Center, I tell them cancer is like a weed. Other people are taking care of your weed. It's my job to work with the garden and make your soil as inhospitable as possible for the growth and spread of the weed. I do that to look to see how you're fertilizing the garden. That is what you eat and what supplements you take. Then I go into my spiel that the diet should be **organic, plant-based, antioxidant rich, anti-inflammatory, real and whole foods**. Then I dive deeper into the fruits and vegetables, whole grains, nuts, etc. I talk about meat and fish and chicken and eggs, and then move on to review **the list of medications and supplements that are in the patient's electronic medical record**.

Often when I see a patient, and I go through their list of pharmaceuticals, I say, “Oh. You don't take any supplements or vitamins?” And they say, “Oh. Yeah. I do.” Then they generate a list of 13 other things that the physician hasn't listed on their chart. I know myself because I went for my annual follow-up. They sent me my list of medications and supplements. I was talking to my doctor when I got there, and I said, “Well. There are some things that we need to change.” Then I started listing my supplements, and he was at the computer. He said, “Let's just keep it simple.” They don't want to know that, but **it's important that we do share that information because sometimes there are potential interactions**.

That's when patients come to me with their shopping bag full of supplements that have been recommended by their next door neighbor and their mother's sister-in-law, etc., and ask, “Can I take this?” This is an important question. Because the issues are: will there be any interaction with the pharmaceuticals that they're currently taking? Or will there be an oxidant-antioxidant interaction because radiation therapy and chemotherapy work by creating those free radicals of oxygen to knock into the tumor DNA and smash it. And **if you're taking antioxidants, they're going to take those free radicals out of circulation, so they don't do the damage that they're intended to do**. That's important, and I review that with patients. But again, a lot of that is not based on evidence from randomized controlled trials where, for example, patients taking oxaliplatin (a type of chemotherapy drug with platinum) are randomized to take the saw palmetto (a supplement) or not, because we haven't done all that research. So you have to be evidence-informed.

Increasing evidence is coming now from the Society for Integrative Oncology, founded about 25 years ago, collaborating with the American Society of Clinical Oncology, ASCO, the major umbrella institution for all oncologists, to create guidelines. I was recently on a committee that was not a collaborative, but it was an ASCO committee that created a new guideline on cannabis in cancer care. The SIO and ASCO have collaborated on guidelines for treatment of

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fatigue, anxiety, and depression. More guideline collaborations are in preparation or in development. These guidelines work by reviewing the published literature and deciding if they can make a recommendation, and then telling you the strength of the recommendation. For example, yoga for fatigue. There were a number of articles. They determine if the articles are high quality or low quality, and then they determine the strength of their recommendation. Integrative medicine recommendations are becoming more evidence-based, if you will, as well as evidence-informed.

My goal when I see a patient is to give them back a sense of control. When you hear the diagnosis that you have cancer, your locus of control has been ripped from underneath you. You're now at the mercy of the surgeon, the radiation oncologist, the medical oncologist, and even the chemotherapy nurse. By giving the patients things that they can do themselves: modifying their diet, increasing their physical activity, rational use of supplements, decreasing stress, that allows the patient to have an increased sense of control.

Another goal of integrative medicine is to decrease ongoing inflammation, because we now appreciate that inflammation is the cause of many of the degenerative diseases of aging, dementia, heart disease, and cancer. When you decrease inflammation, you “uninhibit” the body's immune system so that it can also take part in the fight against cancer. I'm sure many of you are aware that the new trend in treating cancer is immunotherapy to unleash the patient's own immune system in the fight against cancer, and inflammation inhibits that. Decreasing inflammation is key.

Then stress. I used to ask all of my patients to tell me their story, but we get graded as doctors. I did that on purpose because I wanted to hear the person's own impression of their story. But my lowest grade was always, “The doctor didn't know my history.” So I don't ask to hear their story anymore. I tell people their story from what I gathered from the chart, and ask if it's correct. But when I asked people to tell me their story, many people wove a story as if stress caused their cancer. Stress in-and-of-itself is not going to cause cancer. But stress is adrenaline or epinephrine which kills your lymphocytes, the building block cells of the immune system that stresses cortisol, a steroid hormone, which is an immunosuppressant. So decreasing stress is critical for people living with and beyond cancer and for all of us in today's crazy mixed up world.

With all those goals, what happens is that I increase a person's sense of hope. Just last week I saw a new patient who said, “Dr. Abrams, you've really given me some hope.” It's not like I say, “You don't have cancer. You're not going to die.” Giving people things that they themselves can do is very empowering. There are many things that people can do to be active in their treatment.

Brad Power 15:20

I have lymphoma. When I was diagnosed, I asked about nutrition. I was being treated at Dana Farber, and I talked to a nutritionist at Brigham and Women's, and they gave me information. It was the same information you would get if you wanted to have a healthy brain or a healthy heart. It was just general advice, which being a native Californian, I just naturally follow. These are all healthy things that you should do. I adopted them over the years and followed them. So it

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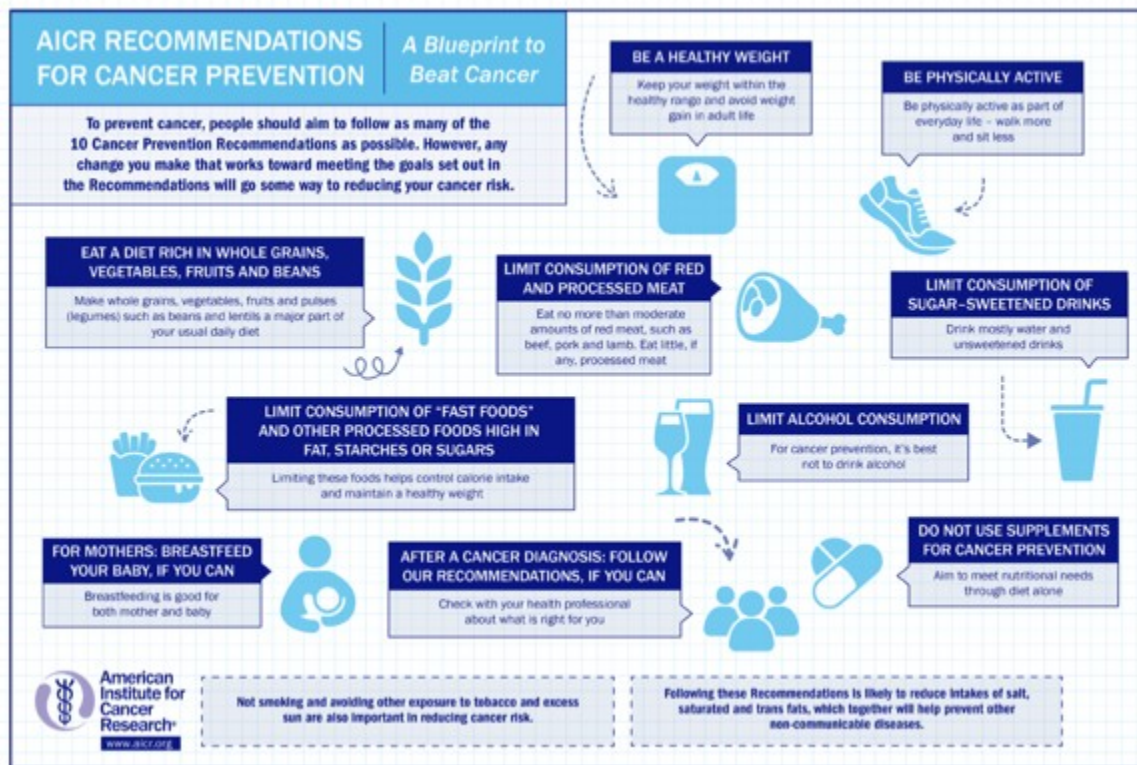
really gave me no information. What I wanted to hear was, “You have lymphoma. You're getting chemotherapy. Here, the complementary supplements or treatments are things you should really emphasize to increase the effect of that chemotherapy.” Currently, I'm being treated with immunotherapy. I have the same question, “What would be the things that would boost my immune system that would increase or make the immunotherapy more effective?” It's a more complementary question. I'm curious how you think about that middle zone where things are selectively personalized, rather than generically true for good health?

Donald Abrams 16:47

That's an issue because we don't have the data to answer those questions. More and more evidence is suggesting that people who have taken, for example, a probiotic, don't do as well with immunotherapy. Or in Israel, they have a number of observational studies that show that people who use cannabis while they're getting immunotherapy have much worse survival outcomes than people who don't use cannabis. But these are observational retrospective or maybe prospective studies, but they're not randomized, placebo-controlled. I feel that the question of reverse causation: are the people using cannabis because they have a worse prognosis? And not that cannabis is making their immunotherapy less effective? So the answer to your question is that nobody can tell you what foods to eat to help with lymphoma. I say that what we're doing is making your soil as inhospitable as possible to the growth and spread of the weed. **Your fertilizer should be organic, plant-based, antioxidant-rich, anti-inflammatory, real and whole foods.**

I'm not a big fan of juicing. Juicing is sugar.

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I follow the [World Cancer Research Fund/American Institute for Cancer Research guidelines](#). These are guidelines for reducing the risk of cancer. Number 10 says for cancer survivors follow the nine guidelines above.

Number one is to **be a healthy weight**. We believe that 40% of all cancer now is related to being overweight or obesity.

Number two is to **be physically active**, which is a way to maintain a healthy weight. Physical activity decreases the risk of our most common malignancies, breast, colon and prostate. Physical activity also improves survival in patients with those malignancies, and even with pancreatic adenocarcinoma.

Guideline number three is to **avoid sugary drinks**. I was at the microphone in Bethesda when they unveiled that as a new guideline in 2007. I said, “There are sugary drinks, and there are sugary drinks.” You can drink a cola beverage, God forbid, or a fruit punch, which is probably glucose and high fructose corn syrup. Or you can squeeze three oranges in the morning. The response from the podium was energetically, “They’re all the same”. Because if you eat the orange, the fiber slows down the absorption of sugar into the bloodstream. But if you squeeze the sugar away from the fiber, it’s like drinking a cola. Why is that bad? When the body sees that sugar it responds with insulin, and insulin-like growth factor, both of which promote inflammation. And the growth factor is a growth factor for cancer cells as well. In Australia, they rank food in the supermarket for the consumer. And they recently dropped fruit juice from five

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stars to two stars, ranking it below Diet Cola, which I never would recommend that anybody drink. I would tell you if you have lymphoma, juicing is not something I like because cancer loves sugar. One of my oncology colleagues told me, “Why do you tell all of our patients that cancer loves sugar?” I say, “What’s a PET scan? We inject people with radio-labeled glucose, and where does it go? Right to the cancer, because cancer needs sugar. It doesn’t use oxygen.”

Guideline number four is a new one and it says **avoid fast foods**. I read my colleague [Robert Lustig](#)’s book, “[Metabolical](#)”. Robert is our pediatric endocrinologist who fights the war on childhood obesity and sugar. In “Metabolical” he blames our deterioration of the health of the nation over the last 50 years to increased consumption of processed and ultra-processed foods. I say eat something that you recognize as a real food. There is evidence that people who consume ultra-processed foods are at greater risk for many cancers. The positive guideline is to **eat more fruits, vegetables, whole grains, nuts, and legumes**. In the fruits and vegetables, **I favor cruciferous vegetables that grow in the shape of a cross: broccoli, cauliflower, Brussels sprouts, cabbage, kale, collard greens, bok choy, and arugula. Season with ginger, garlic, onions, and turmeric. Your fruit should be heavily pigmented so the berries are all good for you.** For animal products I like deep cold water fish: salmon, black cod, albacore tuna, herring, mackerel, and sardines. Chicken and eggs are pretty inflammatory. Poultry, which I eat, should be organic. Poultry eggs, which I don’t eat, should be organic omega three. **Eggs are second only to processed foods as far as increasing mortality, and eggs are associated with prostate cancer.** Two other heavily pigmented fruits for prostate cancer that I recommend are pomegranate and tomato. The lycopene in the tomato needs to be oil-extracted though to be bioavailable.

Alcohol. We now believe that 6% of all cancers are related to alcohol, and the leading cause of deaths from alcohol in people over the age of 50 is now cancer. So the guideline used to be a little bit equivocal about alcohol. But now it says **for cancer prevention, it’s best not to drink alcohol**. So again, I don’t have a specific recommendation for lymphoma or lymphoma on immunotherapy.

I’m a big fan of medicinal mushrooms as a supplement. But the way the mushroom works, the cell wall, the mushroom resembles the cell wall of a bacterium. When you ingest these non-edible medicinal mushroom capsules, your body thinks you’re being invaded by a bacteria. It mounts a nonspecific immune response to fight the bacteria that we also hope will fight cancer. So I do not recommend medicinal mushrooms to patients with lymphoma, because I believe the immune system was already turned on too much. And I don’t recommend medicinal mushrooms to patients on immunotherapy because I don’t want the immune enhancement of the mushroom to interfere with the immune enhancement of the immunotherapy, which is potentially much more therapeutic. These are both totally “Donald gestalts”, not based on any data whatsoever, because nobody’s done these studies. But in talking to my colleagues around the country, who are also integrative cancer care providers, they agree and have adopted the same sort of guidelines. Sometimes common sense isn’t so bad.

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If you go to the oncologist and the doctors, and ask, “What should I eat?” “It doesn't matter.” “What about supplements?” “Doesn't matter. Won't help.” “What about exercise?” “If you want.”

There's not much that we can do as patients. I can't prescribe myself drugs, but I can change my diet. I can change my exercise. I can figure out my supplements. So this is super helpful. But let me just ask you about one thing that you touched on: the idea of ROS (Reactive Oxygen Species, unstable oxygen-containing molecules that can be generated by most cancer chemotherapeutics) with the chemo, and I talked to a Chinese herbalist, I talked to everybody when I was diagnosed. One of the consistent things I heard was don't take vitamins and supplements when you're on chemo because it might fight the chemo for all the reasons that you mentioned. But I was really deficient in vitamin D, vitamin Bs, selenium, magnesium, all that stuff. So I've kind of gotten that back.

But lately, there's this idea that one of the benefits of exercise is that it results in my toxicity. In other words, it really stresses your cells. and it cleans out some of the bad mitochondria or damaged mitochondria. I heard this on [Rhonda Patrick](#) (a longevity expert) two weeks ago. She said that there's a theory that if you're taking vitamins and supplements, it's working against the stress that you're getting from the exercise. I'm just wondering if you have an opinion on that, because that's kind of a radical thought to me.

Donald Abrams 25:34

That's a radical thought. So a few things. First of all, I am not going to malign my oncology colleagues for saying it doesn't really matter, although it does frustrate me. Most oncologists are in organ-specific cancers, like GI (gastrointestinal), GU (genitourinary), breast, and so on. I retired four years ago, so I'm not trying to keep up as much as I used to, but the advances in the field and the number of new drugs and the names of those new drugs are so astounding, that I can't really fault them for not keeping up with integrative oncology and knowing that it does matter what you eat, and that you can take supplements during chemotherapy. Vitamin D is the only blood test that I order for patients that I see at the Osher Center. Low vitamin D puts people at greater risk for cancer. **People with cancer whose vitamin D levels are low don't do as well as people whose vitamin D levels are normal.** So you certainly should have taken vitamin D while you are getting your chemotherapy, and there's no risk to taking vitamin B12 either.

When I talk to patients about supplements during chemotherapy, I'm trying to figure out what the goal of treatment is. If the goal is a cure, or if the chemotherapy is given in an adjuvant setting that is after a surgical intervention, and there's no evidence of disease, then I don't want to do anything that could potentially decrease the risk of a cure or interfere with the chemo. If the goal of chemotherapy is only palliative, and we're not going to cure this cancer, and the patient feels like they want to have some control, and they want to take their supplements, I'm going to allow it. However, if the radiation therapy, and some chemotherapeutic agents, as I mentioned, work by creating those free radicals of oxygen. And if people are on those, I'm going to say, “Well, maybe avoid some of your stronger antioxidant supplements, like vitamin C, vitamin D coenzyme Q10, etc., while you're getting the chemo.”

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With regards to stress and exercise, if supplements are going to impair that, it's out of my wheelhouse. But I think you're correct in thinking that that's a bit radical. Everybody's got to have an opinion and write a paper on something. So that's probably where that came from.

Brian McCloskey 28:11

You mentioned that you would avoid taking mushrooms if you're doing immunotherapy.

Donald Abrams 28:18

First of all, eating mushrooms is fine. **All mushrooms must be cooked.** Slicing a white button mushroom and throwing it in a salad raw is a “no”. White button mushrooms have a cancer-causing compound in them. For immune enhancement it's better to eat **shiitake, maitake, and enoki, because you have some immune enhancement** and perhaps some anti-cancer activity. It's the mushroom capsules that are more concentrated that I would avoid if I were on immunotherapy.

Brian McCloskey 28:50

Are you familiar with the research that [Paul Stamets](#) did with respect to agarikon, which is an old growth forest mushroom that supposedly has immune enhancing features, particularly with respect to mRNA vaccines? There was a recently published paper on that. What do you think about that if you're familiar with it?

Donald Abrams 29:12

Paul is a personal friend. Agarikon, as you're saying, he thinks is more antiviral than immune enhancing. My favorite Stamets mushrooms are **Turkey Tail**, which is the one that's been studied the most in Asia, trametes versicolor, otherwise known as coriolus versicolor. In the books that I've read, and others don't agree with this, it takes about four to six weeks, taking a mushroom for the immune benefit to be maximum, but then it dissipates because the body becomes used to it. So I ask patients to alternate Turkey Tail with Paul's seven mushroom blend, that he humbly named after himself, Stamets Seven, that includes seven different mushrooms, but not Turkey Tail. So I say, get 60 capsules of that and take two a day for a month and then switch back to the Turkey Tail. Personally, I stop all of my supplements the last four days of every month, just to give my body a chance to clean out and say, “Yay. They're back again on the first of the month”. I don't think agarikon is one of the components of Stamets Seven, but I believe it's part of the “My Community”, which is his 17-mushroom blend, which has such low doses of everything that I consider to be a good antiviral, but not so good anti-cancer.

[Host Defense](#) is my go to company that I recommend to my patients.

Jeff Krolick 31:06

I have a question about intermittent fasting and eating intervals.

My oncologist who practices as an integrative oncologist has recommended a regimen of not eating between 6pm and 7am, and to fast periodically, even including during a radiation

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treatment I had, for which I had no side effects that I could determine. I hadn't heard you speak really yet about fasting. I'm wondering how you might view this in terms of integrated oncology.

Donald Abrams 31:58

I am old school. I cured many patients with cancer who didn't have to fast. The theory is that if you fast, the cancer cells are more susceptible to the effects of the cancer therapies than the host normal cells. Well, there's a fasting-mimicking diet that was created by [Valter Longo](#) from Southern California, that's a five-day. They send you five days of meals and 800 calories on the first day and 400 calories the next four, and they tried to do a study in women in the Netherlands with breast cancer. It was a phase two, three study, but they couldn't get to phase three, because people couldn't tolerate that diet. And if you look in the supplement to the publication, the women who did the fasting-mimicking diet had more admissions to the hospital with fever and low white blood cells. So it doesn't seem to me that that is protecting the normal cells from the effects of the damaging effects of the chemotherapy.

I usually only fast one day a year on Yom Kippur. By the end of the day, I'm cranky and dizzy and feel like I'm going to faint. I say, “Why would you want to put people getting chemotherapy through this?” But lately when I'm fasting on that day, I feel better, so maybe there is something to doing a fast day every once in a while.

Time-restricted eating has become very popular. I liked the times you said: 6:00 pm to 7:00 am because most of the patients I see don't eat breakfast. There's increasing data out there that people who skip breakfast are at higher risk for cardiovascular disease and depression. **Breakfast is probably the most important meal of the day.** If you're going to do time-restricted eating, I would make sure that you do get to eat breakfast.

I've also heard from patients in my group that if they fast, they don't vomit when they get their chemo. Well, I guess that makes some sense. But again, I haven't seen enough data to suggest to me that this is something I need to be recommending to everyone.

Jeff Marchi 34:29

I'm a 14-year survivor of prostate cancer, BRCA2. You talked about marijuana for mental relief. Two months ago, I took a 25 milligram tablet, which I'd been doing for a while off and on, and within 15 minutes I was in afib (atrial fibrillation, an arrhythmia). That's the second time that happened. It was a higher dose the last time, but I had to go be cardioverted at the hospital the next day. I just wanted to mention that that is a risk. That was after taking abiraterone for two-and-a-half years, which caused a couple of afib events without marijuana, but two times it put me in afib within an hour. I don't touch the stuff anymore, but you can't inhale it because too many years of doing that it's just not good.

I found that by switching to darolutamide, I've now had seven months of undetectable disease, and part of it is because my diet now consists of a huge salad in the middle of the day. In the morning I normally have cereal with low carbs and high protein, and at dinner at the most I'll

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have one piece of chicken with a vegetable, broccoli, and kale in the middle of the day. They've really made a difference.

I was wondering what would you recommend for a breakfast that is high protein but low carb and good for one to eat?

Donald Abrams 36:47
High protein, low carbs, and what?

Jeff Marchi 36:49
Good for your cancer. It's helped me a lot that my diet is always quite restricted.

Donald Abrams 37:01
When you say “low carbs,” I'm a big fan of carbohydrates. Fruits, vegetables, whole grains, nuts and legumes are all carbohydrates, and that should be 60% of what we ingest. **You can do oatmeal, walnuts, and blueberries. I also like muesli which is the only unsweetened cereal out there. Many different grains and nuts, and I put blueberries and walnuts in that.**

Another breakfast that I like is broccoli, tofu, and rice with avocado-based mayonnaise on it.

What I generally eat for breakfast is [mochi](#), which is pounded brown rice and water. It's not the sweet mochi that people have for dessert. It's hard to find in a market. I get mine from Eden Foods. I puff it up in the oven, bake it for 13 minutes at 450, smear almond butter on it, and put a sweet potato on top of it. That's what I had this morning.

I don't shy away from carbohydrates if they're complex carbohydrates and not simple carbohydrates.

Brad Power 38:08
What about the question about cannabis and side effects?

Donald Abrams 38:11
Ingesting 25 milligrams orally is definitely going to put you at risk for side effects. I tell patients if they want better control over the onset, the depth, and the duration of the effect, inhalation is better than oral ingestion. When you inhale THC, which is the main psychoactive component of cannabis, the peak plasma concentration is reached in two-and-a-half minutes and dissipates quite rapidly after that. If you ingest it by mouth orally, the peak plasma concentration is reached in two-and-a-half hours. When you take [delta-9](#) THC (the most psychoactive potent form) by mouth, when it goes through the liver, in the so-called first pass metabolism, the delta-9 THC gets broken down into an 11 hydroxy metabolite, which is even more psychoactive. So in addition to being at greater risk for cardiovascular effects, where I'm more used to hypotension, hypertension or tachycardia, as opposed to atrial fibrillation, you're more at risk for having an ego-dystonic or -dysphoric reaction (thoughts that are out of sync with who you are and what you believe and value) if you orally ingest it.

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Plus, most of the orally ingested forms are sugar: gummies, edibles. You took a tablet or a capsule, so that's not putting you at risk for sugar.

My favorite delivery system now for my patients are tinctures because if you put a liquid under your tongue, you immediately absorb some sublingually, which reproduces the kinetics of inhalation, and then you swallow the rest, which reproduces the kinetics of oral ingestion. **I usually recommend tinctures.**

Allen Morris 40:57

I live in the world of evidence-based medicine. The levels of evidence are a pyramid that you're well aware of. The lowest level of evidence is a bench study and an expert opinion. Of course, you are an expert. So your expert opinion is the lowest level of evidence within the confines of evidence-based medicine.

A panel of experts, such as yourself, would be a level of evidence higher than just a single expert, such as yourself. I suspect this [World Cancer Research Fund/American Institute for Cancer Research guidelines](#) are experts like yourself who got together and came up with ten recommendations.

Are your societies, like the Society of Integrative Medicine, mature enough that they have impaneled experts to make evidence-informed, not evidence-based, recommendations?

I fear, like other people fear, the avalanche of “snake oil salesmen” stuff out there. And patients are reaching for stuff, especially stage 4 patients. They want people like you that have the moniker of a world renowned institution like UCSF to literally lay out recommendations and probably not just recommendations from you, personally, from you reading bench research, and your own isolated opinion. Do you have a consensus panel, akin to the NCCN which empanels 20 to 24 experts, in integrative medicine? Does such a panel exist [and do they have levels such as levels of evidence-informed {my word choice} “confidence”]?

Donald Abrams 43:13

The American Institute for Cancer Research/World Cancer Research Fund is a continuous update project. They publish a 700-page booklet every 10 years, and they definitely have a panel of experts from all over the world, greater than 24 people, that makes the 10 recommendations for decreasing the risk of cancer.

Allen Morris 43:40

You divided your treatments into three things: nutritional, supplements, and physical stress reduction/exercise. We got testimony from a patient. He asked about nutrition. He asked about exercise. Nutrition and exercise are evidence-informed without a randomized controlled trial study. Everybody says lose weight. Everybody believes in it. For years there was a food pyramid. When I grew up 60 years ago, there was the food pyramid, this is not new, but is accepted and is evidence-informed. In other words, this is mainstream medicine, not owned

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only by integrative/complementary/alternative folks. Mainstream doctors subscribe to this consensus, that nutrition is important and that exercise is important. If there are guidelines that say, “Hey. Eat cruciferous vegetables,” and all that, that is not outside the realm of mainstream medicine. [Admittedly, in mainstream medicine, nutritional and dietary advice is delegated to dietitians and nutritionists, freeing up mainstream doctors to deal with disease with prescription drugs, surgery, radiation, etc.]

The real gray zone is the supplements and other therapies such as IV Vitamin C, special water, Ozone, etc., which are a multibillion dollar industry, not proper exercise or a healthy diet which have in various evolving forms been present since my formative years.

In the US, you have integrative medicine. First off, have you vetted who the experts are, and then after you have vetted who the experts are, have you impaneled them as a society into a group of like 20 to 24 to vet, for example, whether mushrooms if they're heated versus if they're eaten raw? I'm making up a minutia question. It is lame, in part, because I do not follow this stuff. But many want to drill down on their favorite minutia supplement, formula, or home made theory. I know, there are a lot of questions buried there. My apologies.

Donald Abrams 45:29

I don't know how to answer most of them.

The Society of Integrative Oncology was founded by [Barrie Cassileth](#) at Memorial Sloan Kettering about 25 years ago. As I mentioned, it's 600 members from across the world. They do panels with the American Society of Clinical Oncology. I don't think that they've done a panel. They did a breast cancer treatment panel. They sort of said that many of the supplements are not beneficial.

Allen Morris 45:58

You're the expert. But I want to caution everybody: this is in its infancy as far as trying to bridge the gap between evidence-informed and evidence-based medicine. This panel that you're talking about is a union of evidence-based physicians and integrative medicine physicians doing this recommendation. Is my understanding correct?

You said there are 10 recommendations right now. Is my understanding correct?

Donald Abrams 46:31

From the American Institute for Cancer Research/World Cancer Research Fund. Go look at [the site](#). It's very well referenced. Its international panel of experts meets continuously. [Walter Willett](#), Harvard's best nutrition scientist, is one of the main participants in that.

That is different from the Society for Integrative Oncology. You're mixing apples and oranges there. Although many of us in integrative oncology use those guidelines as our evidence to inform/basis to have conversations with patients about how to prolong their survival.

Allen Morris 47:14

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Do you direct your patients to this more authoritative, more evidence-informed and/or based site?

Donald Abrams 47:21

I send them the handout of the 10 recommendations.

Allen Morris 47:25

That's on the positive side. On the flip side, on the negative side, do you caution your patients about all the “snake oil salesmen” stuff out there?

Donald Abrams 47:32

Yes. When patients come to me and say, “Should I juice everything and do coffee enemas?” I say, “That's ridiculous.” Many of my patients spend \$30,000 to go to Tijuana to get things that are totally crazy. But if somebody has metastatic pancreatic adenocarcinoma – I lost my two best friends to pancreatic cancer – and they feel like this is what they want to do, I advise people to, “Go to Tahiti. Spend your money to go to Tahiti and snorkel. Don't spend \$30,000 to get coffee enemas, and all sorts of ozone and rectal insufflation of oxygen (a type of ozone therapy that involves introducing medical-grade ozone into the colon using a rectal catheter). That's crazy.”

Brad Power 48:19

Nigel Brockton is one of the people that is at the AICR. We had [a presentation from him](#).

Robb Owen 48:41

I am a recent head and neck squamous cell carcinoma survivor. During my treatment, I responded extremely well. I supplemented, ate well, a Mediterranean diet, whatnot, and ended my treatment early, based on my response to it. I put together a very lengthy case study that is being reviewed at Mayo right now.

How do you track the success of supplements or other components you suggest to your patients to verify efficacy or do you track them?

Is that done often to try and backtrack to to get a feel for what combinations of supplements and diet work with specific types of cancers?

I'm not sure if that's a good question, or if that's something you can answer.

Donald Abrams 49:47

I think the answer is “No”. It's not done often. Sorry.

Robb Owen 49:55

That's fine. I was wondering whether it should be done more often because when I did my retrospective analysis, I was able to piece together how zinc, vitamin C, B12, alprazolam (a psychotropic medication), and prochlorperazine (a drug used to treat nervous, emotional, and

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mental conditions, non-psychotic anxiety, severe nausea and vomiting) had played a key role in directly affecting the squamous cell from all the research from labs and the NIH.

I want to see how often that is done. I'm sure you've never had a patient in the middle of the cancer treatment put together a case study on themselves, like I did. So there's no data collection on a lot of these integrative methods that we can reference?

Do you see value in collecting data to see when you add in supplements and whatnot, and whatever results you're getting?

Brad Power 51:24

Is it useful to have a very detailed case of an individual patient?

Donald Abrams 51:33

My friend [Glenn Sabin](#) wrote a book on that, [n of 1](#).

Allen would agree that that's not the best, most strong evidence. It's one person's experience. But he managed to write a whole book on how he cured his chronic lymphocytic leukemia with green tea. That's a little bit distracting for other people to believe that they can possibly do that. I'm not sure there's any value in what you're proposing.

Brian McCloskey 52:23

One of my doctors, quite a while ago, [Dr. David Agus](#), you may know him, cofounder of the [Ellison Institute for Transformative Medicine](#) at USC, agrees with a lot of things that you've talked about in terms of managing the soil and all that kind of stuff, but was not a proponent of supplements. His contention was that you pee out a lot of the supplements that you take in.

I'm curious to get your thoughts on that, because that's been an overarching message I've had in my head that it's not really particularly useful to do supplements.

Donald Abrams 53:15

Again, the main supplement that I recommend to people is vitamin D. So much of society is vitamin D deficient that the Institute of Medicine actually lowered the lower limit of normal from 30 nanograms per ml to 20, because that encompasses 95% of the US population. They felt it was normal. A lot more people are deficient. **Numerous studies in the medical literature have demonstrated that people with cancer whose vitamin D levels are low, have worse outcomes than people whose vitamin D levels are normal.** The question that isn't answered is, “Is supplementing vitamin D to get to a normal level the same as having a normal level de novo?” We don't know that, but I'd rather err on the side of caution and bring people's vitamin D levels into a good range.

People who take proton pump inhibitors, especially if they're over the age of 50, can become deficient in some nutrients, the most important of which is vitamin B12. So if people are on omeprazole, or something like that, I often recommend a B12 supplement.

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I like Coenzyme Q10 for people who are on statins because statins deplete the muscles of Coenzyme Q10.

I used to be a bigger fan of omega-3 supplementation than I currently am.

There is a study in men with prostate cancer who were going to have their prostate removed at UCLA. One group got a low fat diet with omega-3 supplementation. The other group got the standard American diet with no omega-3. The food was prepared and delivered by UCLA chefs. At the end of six weeks the prostates were removed, and the men who got the omega-3 supplements had smaller prostates, less cancer, less aggressive cancer, and their plasma inhibited prostate cancer cells in the test tube, whereas the men with no supplementation didn't.

There are also suggestions that omega-3 may decrease the risk of heart disease, myocardial infarction.

I'm a big anti-dairy person. I don't think dairy is a good food. Dairies are a major source of calcium. Calcium decreases the risk of colon cancer and may increase the risk of more aggressive prostate cancer. So for men, I'm a little bit risky on how much calcium to recommend. Calcium constipates. Magnesium does the opposite. So I often recommend people take a calcium magnesium supplement.

Zinc is also good for the immune system and for prostate cancer. If you get a cal/mag/zinc, all of those are fine during chemo, during radiation, and there is enough evidence to support that. We need calcium for our bones and magnesium. Dairy, as I said, is the major source of calcium, and I ask patients to avoid dairy. Those are my supplement recommendations.

Then I throw in mushrooms sometimes.

For people who have been treated with chemo, which I consider to be a very potent antibiotic, I often recommend taking a probiotic supplement.

And that's it.

Patients come to me with quercetin (an antioxidant from a group of plant pigments that give many fruits, flowers, and vegetables their colors), resveratrol (a chemical mostly found in red grapes and products made from these grapes), honokiol (a natural small-molecule polyphenol of a traditional Chinese medicine from magnolia bark), and artemisinin (an ancient Chinese herbal therapy for malarial fevers). I say, “That's all snake oil. Forget it. Save your money.” Vitamin C is OK orally. When I did a course at the National Cancer Institute, I learned that the maximum amount that we can absorb from an oral dose is 240 milligrams. My patients are taking a gram, two grams, three grams. I say, “You're peeing that all out.” Take it in divided doses if you want to take that much.

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Vitamin C intravenously, in my opinion, “Stay away. Save your money. Go to Tahiti.”

Brad Power 57:20

Thank you very much, Dr. Abrams.

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Discussion in the Chat

00:37:49 Dr. Chris Apfel: Lorenzo Cohen from MD Anderson cited a breast cancer study (exercise, plant-based nutrition etc.) that cited a 50% increase in progression free survival (?) near the end of his talk. Wasn't that an RCT?

<https://www.youtube.com/watch?v=QXzY4ox7kTM>

00:43:33 Cheryl Middleton: Could you list the mushroom supplements please?

00:49:26 David Plunkett: Individual differences: the only thing worse than vomiting during my chemo cycles was retching with nothing coming up.

00:50:19 Raj Aji: Could you list your go to mushroom supplement provider that Dr. Abrams mentioned- was it Dr. Stamets company?

00:53:40 Dr. Chris Apfel: I recall having seen a number of studies suggesting increased survival with a ketogenic diet in glioblastoma patients.

Trying to pull up those papers during this call, but in the meantime, here is a systematic review and meta-analysis on ketogenic diets in animals with cancer.

00:54:46 John Sandiford: Be careful with cordyceps mushrooms as they increase testosterone

00:54:55 Rebecca Driscoll: THC olive oil and healthy foods worth considering if your state allows delivery <https://pantryfoodco.com/>

01:07:19 Dr. Chris Apfel: It does look like there is also clinical evidence for the benefit of a ketogenic diet (which can be plant based!) for cancer patients, which makes sense given that cancers love sugar/carbohydrates (the well known Warburg effect).